DRAFT
Little Lost Creek Conservation Area

Ten-Year Area Management Plan
FY 2016-2025

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OVERVIEW

- **Official Area Name:** Little Lost Creek Conservation Area, #8030
- **Year of Initial Acquisition:** 1980
- **Acreage:** 2,899 acres
- **County:** Warren
- **Division with Administrative Responsibility:** Forestry
- **Division with Maintenance Responsibility:** Forestry
- **Statements of Primary Purpose:**
  - **A. Strategic Direction**
    The primary purpose of the Little Lost Creek Conservation Area (CA) is to create and maintain a healthy, diverse and sustainable mosaic of forest, woodland and glade communities that provide habitat to a wide variety of plants and animals; provide a wide variety of high quality recreational opportunities for the public; and maintain high quality infrastructure and resources that make these recreational opportunities possible.
  - **B. Desired Future Condition**
    The desired future condition of the Little Lost Creek CA is a healthy forest/woodland/glade complex intermixed with a diversity of open land natural communities.
  - **C. Federal Aid Statement**
    N/A

GENERAL INFORMATION AND CONDITIONS

I. Special Considerations

- **A. Priority Areas:** Missouri River Hills Terrestrial Conservation Opportunity Area, Missouri River Hills Priority Forest Landscape, The Nature Conservancy's Central Missouri Hills Conservation Portfolio Site, Lost Creek Aquatic Conservation Opportunity Area, Audubon Missouri Important Bird Area
- **B. Natural Areas:** None
- **C. Other:** A 289-acre block of forest/woodland is designated as permanent old-growth in Compartment 4. Forest management will follow management guidelines provided in *Options for Increasing Ruffed Grouse Habitat on Daniel Boone and Little Lost Creek Conservation Areas - Warren County, Missouri* (Bakameyer, Blatz, Isabelle & Raeker, 2013).

II. Important Natural Features and Resources

- **A. Species of Conservation Concern:** Species of conservation concern are known from this area. Area Managers should consult the Natural Heritage Database annually and review all management activities with the Natural History Biologist.

B. Caves: None

C. Springs: Yes, records kept with Department Natural History Biologist.

D. Other: Little Lost Creek CA is in the Forested Rugged Hills and Breaks land type association within the Outer Ozark Border subsection of the Ozark Highlands section. This land type consists mostly of exceptionally steep and rugged lands that are associated with many river valleys. Local relief is 250 to 450 feet, with narrow ridges, steep-sided slopes and narrow, sinuous valleys. Historically the most densely wooded landscapes in the region, these landscapes are associated with a variety of parent materials (including loess, limestone, sandstone and cherty residuum), soils and forest/woodland types. Outstanding spring-fed perennial creeks and small rivers have gravel beds and deeply incised valleys. Today, much of this landscape is still largely timbered in second-growth forest with high habitat diversity including numerous woodland and forest types, glades, fens, cliffs, caves, springs and streams. Many areas contain more trees than they did historically and often species mixes are different from past mixes.

III. Existing Infrastructure

- 5 parking lots
- 7.0-mile natural surface/gravel multi-use (hike/bike/horse) trail
- 2.75 miles of area service roads (natural surface/gravel)
- 4 picnic/primitive camping sites (no amenities provided)
- 4 fishless ponds (1.2 acres)
- 17 wildlife watering holes (1.0 acres)

IV. Area Restrictions or Limitations

A. Deed Restrictions or Ownership Considerations: None

B. Federal Interest: Federal funds may be used in the management of this land. Fish and wildlife agencies may not allow recreational activities and related facilities that would interfere with the purpose for which the State is managing the land. Other uses may be acceptable and must be assessed in each specific situation.

C. Easements: There are three known easements on the area. There is a buried pipeline, a buried fiber optic line, and an above ground electric line.

D. Cultural Resources Findings: Yes, records kept with Missouri Department of Conservation (the Department) Environmental Compliance Specialist. Managers should follow Best Management Practices for Cultural Resources found in the Department Resource Policy Manual.

E. Hazards and Hazardous Materials: None observed.

F. Endangered Species: None observed.

G. Boundary Issues: An 80-acre private inholding is found within the area.

MANAGEMENT CONSIDERATIONS

V. Terrestrial Resource Management Considerations

Little Lost Creek CA is comprised of approximately 2,734 acres of forests, woodlands and scattered glades. Approximately 165 acres of open land in various stages of succession are also found on the area. Forest and woodland/glade management will be directed at maintaining healthy forest and woodland/glade natural communities for wildlife habitat. Open land management will be directed at maintaining healthy open land communities for wildlife habitat.

The forests and woodlands/glades on Little Lost Creek CA can be divided into two general categories:

1) Southern and Western aspects: These sites are typically dry and rocky with poor soil moisture and fertility, and are generally classified as woodlands. Trees exhibit slow growth, poor form and are of low quality for timber value. Typical tree species found on these sites include white oak, black oak, post oak, chinkapin oak, various hickory species and an understory of serviceberry, dogwood and sugar maple, among other species. These sites also have some small glade inclusions that contain a variety of grass and forb species.
2) Northern and Eastern aspects: These sites typically retain more soil moisture and fertility and are generally classified as forests. Trees exhibit moderate to fast growth, good form, and are of higher quality for timber value. Typical tree species found on these sites include white oak, red oak, sugar maple, various hickory species, and scattered walnut, ash, elm, and basswood. The understory typically contains sugar maple, ironwood, and dogwood, along with scattered paw paw and spicebush.

Prior to Department ownership, the forests and woodlands/glades on Little Lost Creek CA saw a lot of intense use and abuse. In the early 1900s, almost all marketable timber that was accessible was harvested. Later, around the 1930s, wooded areas were pushed back as far as possible and burned frequently to improve grazing conditions for livestock. Meanwhile, several invasive species such as fescue, sericea lespedeza, and autumn olive were introduced to the area.

Since the Department acquired the conservation area in 1980, a variety of management practices have been implemented. Forestland has been broken into four compartments and these compartments are inventoried and managed on a 15-year schedule. Forest management activities are implemented to create a combination of early, mid, and late successional stages of forest. Many fields have been restored or maintained to native warm-season grasses/forbs. Wildlife food plots have been installed, which serve the dual

purpose of providing a different food source for wildlife and wildlife viewing/hunting areas for the public. Practices to control and treat invasive species have been implemented. Wildlife watering holes have been constructed and renovated and these serve as important breeding sites for a variety of amphibians.

Mature forests on the area still show some signs of past abuse. Conditions have greatly improved since Department ownership began due to more sustainable and conscientious forest management practices being employed. Sugar maple and other shade tolerant/fire intolerant species have expanded their range in the forests in the past several decades, since the scale and frequency of fire was altered. A lack of management in some areas has also led to some of the forest sites being overstocked with trees. A combination of commercial and non-commercial forest management techniques and prescribed fire have been used to manage the area for healthy and sustainable natural communities that provide wildlife habitat for a large diversity of species. Despite past and continuing efforts, some invasive species still occur on the area. Garlic mustard and autumn olive are the most detrimental invasive species at the current time and affect the largest land area.

Challenges and Opportunities:

1) Manage forest/woodland/glade communities.
2) Control invasive species.
3) Manage field/woodland edge communities.

Management Objective 1: Maintain a healthy forest/woodland/glade complex with management emphasis on wildlife habitat.

Strategy 1: Monitor forest/woodland/glade/openland habitats for invasive vegetation, diseases, and insects. Use a combination of mechanical, herbicide and prescribed fire to suppress any infestations that may develop (Forestry).

Strategy 2: Retain and protect existing den trees according to extablished guidelines (Forestry).

Strategy 3: Complete forest compartment inventories according to compartment inventory schedule and manage forest/woodland/glade stands according to stand prescriptions. Compartment 1 is scheduled for inventory in 2017 and Compartment 2 is scheduled for inventory in 2021 (Forestry).

Strategy 4: Use management tools such as mechanical thinning, herbicide and prescribed fire to manage forest and woodland/glade stands. Even-aged and uneven-aged management techniques should be used in managing forested and woodland stands (Forestry).

Strategy 5: Follow management regime as detailed in *Options for Increasing Ruffed Grouse Habitat on Daniel Boone and Little Lost Creek Conservation Areas – Warren County, Missouri* (Bakameyer, Blatz, Isabelle & Raeker, 2013) in

order to improve habitat suitability for wildlife species that require early successional forest habitat (Forestry).

Strategy 6: Implement best management practices to prevent soil erosion during forest and woodland management activities according to the *Missouri Watershed Protection Practice – 2014 Management Guidelines for Maintaining Forested Watersheds to Protect Streams* (Missouri Department of Conservation, 2014).

Management Objective 2: Maintain a healthy openland/woodland edge complex with management emphasis on wildlife habitat.

Strategy 1: Use a combination of tillage, mowing, herbicide and prescribed fire to manage native grass/forb fields, old fields and wildlife food plots (Forestry).

Strategy 2: Monitor openland/woodland edge habitats for invasive vegetation. Use a combination of mechanical practices, herbicide, and prescribed fire to suppress these species (Forestry).

VI. Aquatic Resource Management Considerations

Lost Creek is a Missouri River tributary and is characterized as an Ozark Border stream. Lost Creek Watershed is designated as an Aquatic Conservation Opportunity Area.

Little Lost Creek CA lies within the Lost Creek Watershed, a designated Aquatic Conservation Opportunity Area. The conservation area contains 6.4 miles of first-order stream and 2.5 miles of second-order stream (Little Lost Creek). The stream reaches in the conservation area have fully forested riparian corridors.

Stream resources on this area have the potential to be affected by the multi-use (hike/bike/horse) trail. Parts of this trail cross, or are adjacent to, Little Lost Creek.

Little Lost Creek CA has 17 small ponds that were constructed as wildlife watering holes or formed by old clay strip pits. Four larger ponds are 0.35, 0.34, 0.3 and 0.19 acres in size. Fish are not stocked in these ponds.

Challenges and Opportunities:

1) Improve water quality and health of streams on the area.
2) Investigate the opportunity to stock fish in the four largest ponds.
3) Manage fishless ponds for optimum wildlife benefit.

Management Objective 1: Improve water quality and health of streams on the area.

Strategy 1: Monitor stability of trail crossings (Fisheries, Forestry).

Strategy 2: Manage riparian forested corridors according to the *Watershed and stream management guidelines for lands and waters managed by Missouri*

Department of Conservation (Missouri Department of Conservation, 2009) (Forestry).

Management Objective 2: Investigate the opportunity to stock fish in the larger impoundments.

Strategy 1: Measure depth and observe habitat of the ponds (Fisheries).
Strategy 2: Seek opinions on the benefits and liabilities of stocking the ponds (Fisheries, Forestry).

Management Objective 3: Manage fishless ponds for optimum wildlife benefit.

Strategy 1: Survey fishless ponds, as needed, to confirm the absence of fish. Use a piscicide to remove fish, where appropriate (Fisheries).

VII. Public Use Management Considerations

Challenges and Opportunities:

1) Provide for high quality hunting, wildlife viewing and other recreational opportunities.
2) Improve educational and interpretive opportunities.
3) Build relationships with neighboring landowners.
4) Maintain the multi-use trail found on the area.

Management Objective 1: Provide for high quality hunting, wildlife viewing and other recreational opportunities.

Strategy 1: Complete management activities that will provide habitat for a diversity of wildlife and plant species (Forestry).
Strategy 2: Maintain and renovate wildlife food plots as needed (Forestry).
Strategy 3: Maintain the multi-use trail to provide hiking, biking, horseback riding and viewing opportunities (Forestry).
Strategy 4: Provide furbearer trapping opportunities on the area (Forestry).

Management Objective 2: Improve educational and interpretive opportunities on the area.

Strategy 1: Communicate to the general public about recreational opportunities (e.g., brochures, Atlas database) (Forestry).
Strategy 2: Explore the possibility of holding a habitat management workshop/tour on the area to showcase a variety of forestry and wildlife management techniques (Forestry, Outreach and Education).

Management Objective 3: Facilitate a good working relationship with neighboring landowners.

Strategy 1: Promote active wildlife habitat and forest management on neighboring landowner properties by making contact with landowners. Use management of Little Lost Creek CA to provide an example of quality management. (Forestry, Private Land Services).
Strategy 2: Work with the local Quail and Upland Wildlife Federation group to reach out to neighboring landowners regarding management of their forest land for wildlife (Forestry, Private Land Services).
Strategy 3: Maintain signage and boundary markings at least every five years to clearly designate Department property boundaries (Forestry).

VIII. Administrative Considerations

Challenges and Opportunities:

1) Maintain area infrastructure at current levels.
2) Acquisition of land.

Management Objective 1: Maintain area infrastructure at current levels.

Strategy 1: Maintain area infrastructure in accordance with Department guidelines (Forestry).

Lands Proposed for Acquisition:

When available, adjacent land may be considered for acquisition from willing sellers. Tracts that improve area access, provide public use opportunities, contain unique natural communities, and/or species of conservation concern, or meet other Department priorities, as identified in the annual Department land acquisition priorities, may be considered (Forestry).

MANAGEMENT TIMETABLE

Strategies are considered ongoing unless marked in the following table:

	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Terrestrial Resource Management										
Objective 1										
Strategy 3		X				X				
Aquatic Resource Management										
Objective 2										
Strategy 1	X									
Strategy 2	X									
Objective 3										
Strategy 1	X									
Public Use Management										
Objective 2										
Strategy 1	X									
Strategy 2	X									

APPENDICES

Area Background:

The Little Lost Creek CA is located in Warren County, about 4 miles south/southwest of Pendleton. The Department acquired the first tract of this area in 1980 and manages it to improve forest and woodland health, wildlife habitat and provide the public with opportunities for hunting, fishing, hiking and wildlife viewing.

This 2,899-acre area is located in the Outer Ozark Border subsection of the Ozark Highlands section. It is over 90 percent forested and includes a mosaic of forest and woodland/glade communities.

A variety of forest and woodland management practices are conducted on the area, including commercial thinning (harvests), non-commercial thinning (timber stand improvement), invasive species control and prescribed burning. Deer, turkey, squirrel, raccoon and other mammals associated with Missouri forest and woodland habitat are frequently seen here, along with a variety of reptiles and amphibians. During the spring through early fall, a variety of neo-tropical birds call the area home; many other bird species are year-round residents.

The area is open to the public from 4 a.m. to 10 p.m. daily. Special facilities include four camping/picnic areas and an approximately 7-mile multi-use trail that is open for most of the year to horseback riding, hiking and biking.

Current Land and Water Type:

Land/Water Type	**Acres**	**Feet**	**% of Area**
Forest/Woodland/Glade	2,734		94.3
Field	157		5.4
Crop Land (Food Plot)	8		0.2
Total	**2,899**		**100**
Stream Frontage		13,200	

References:

Bakameyer, J., Blatz, R., Isabelle, J., & Raeker, G. (2013). *Options for increasing ruffed grouse habitat on Daniel Boone and Little Lost Creek Conservation Areas - Warren County, Missouri*. Missouri: Missouri Department of Conservation.

Missouri Department of Conservation. (2004). *Little Lost Creek Conservation Area management plan*.

Missouri Department of Conservation. (2009). *Watershed and stream management guidelines for lands and waters managed by Missouri Department of Conservation.* Jefferson City, Missouri: Missouri Department of Conservation.

Missouri Department of Conservation (2014). *Missouri watershed protection practice recommended practices for Missouri forests: 2014 management guidelines for maintaining forested watersheds to protect streams*. Jefferson City, Missouri: Conservation Commission of the State of Missouri.

Nigh, T. A., & Schroeder, W. A. (2002). *Atlas of Missouri ecoregions*. Missouri: Missouri Department of Conservation.

Maps:

Figure 1: Area Map
Figure 2: Aerial Map
Figure 3: Topographic Map
Figure 4: Current Vegetative Map
Figure 5: Proximity Map
Figure 6: Easement Map
Figure 7: Compartment Map

Figure 1: Area Map

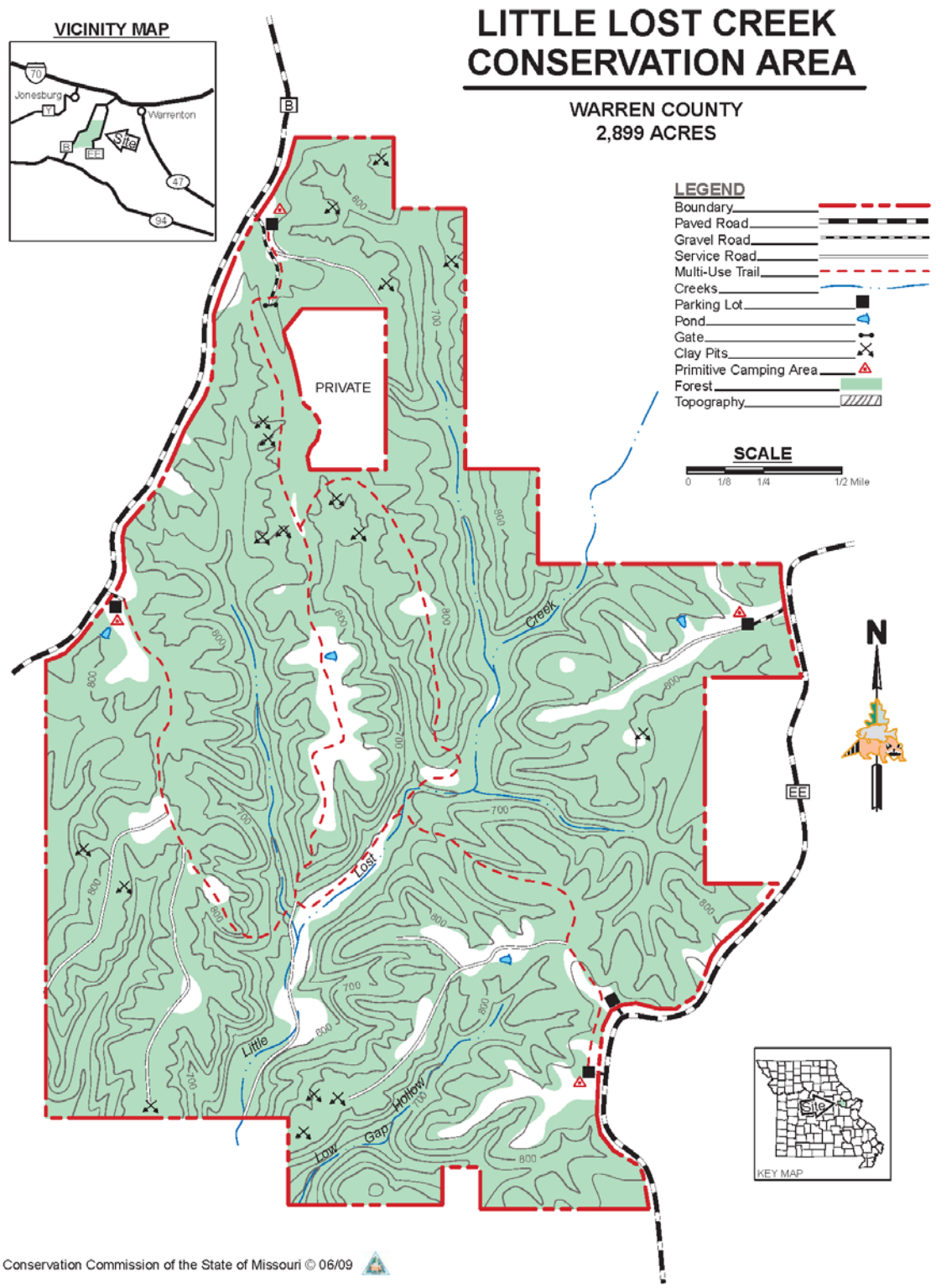


Figure 2: Aerial Map

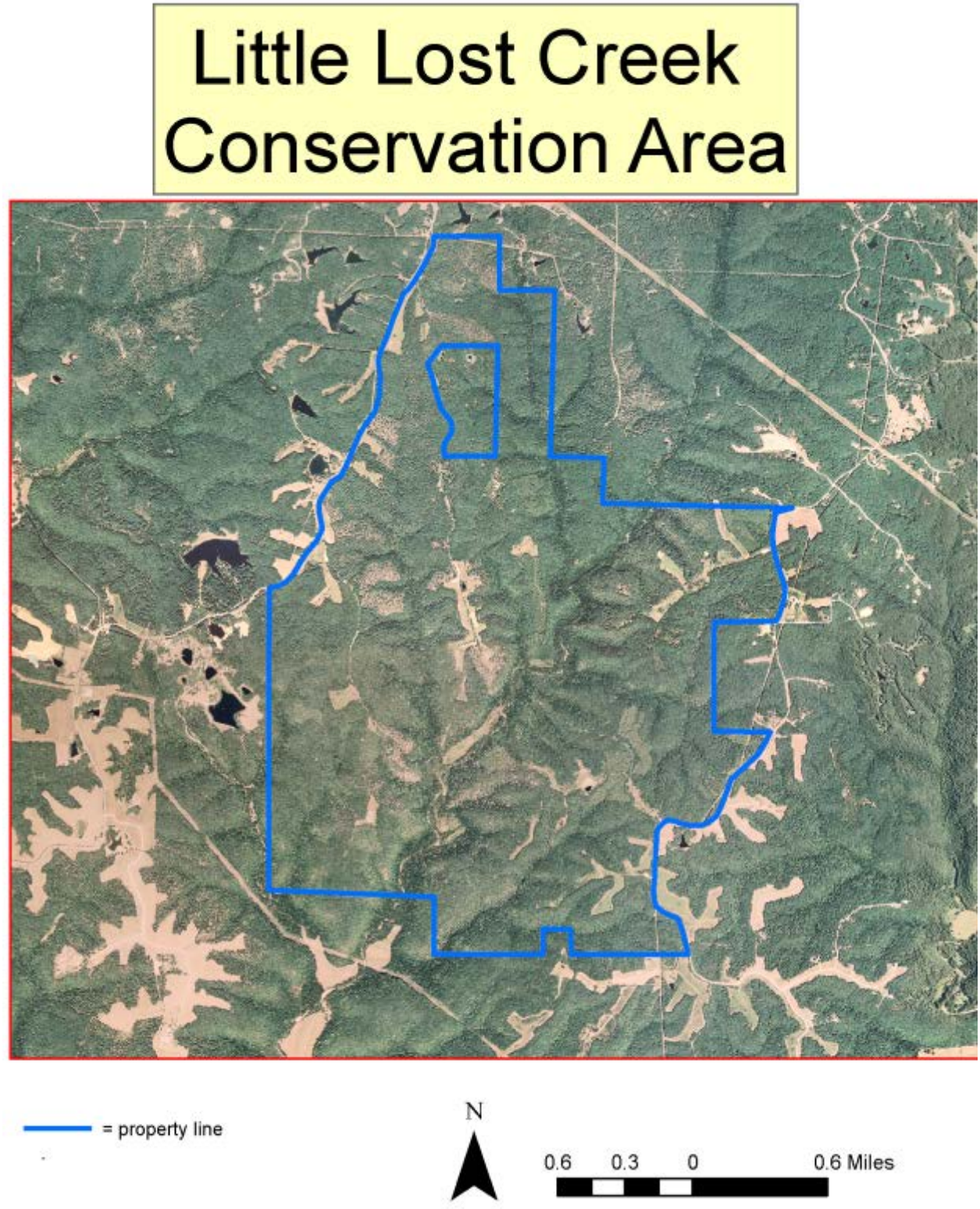


Figure 3: Topographic Map

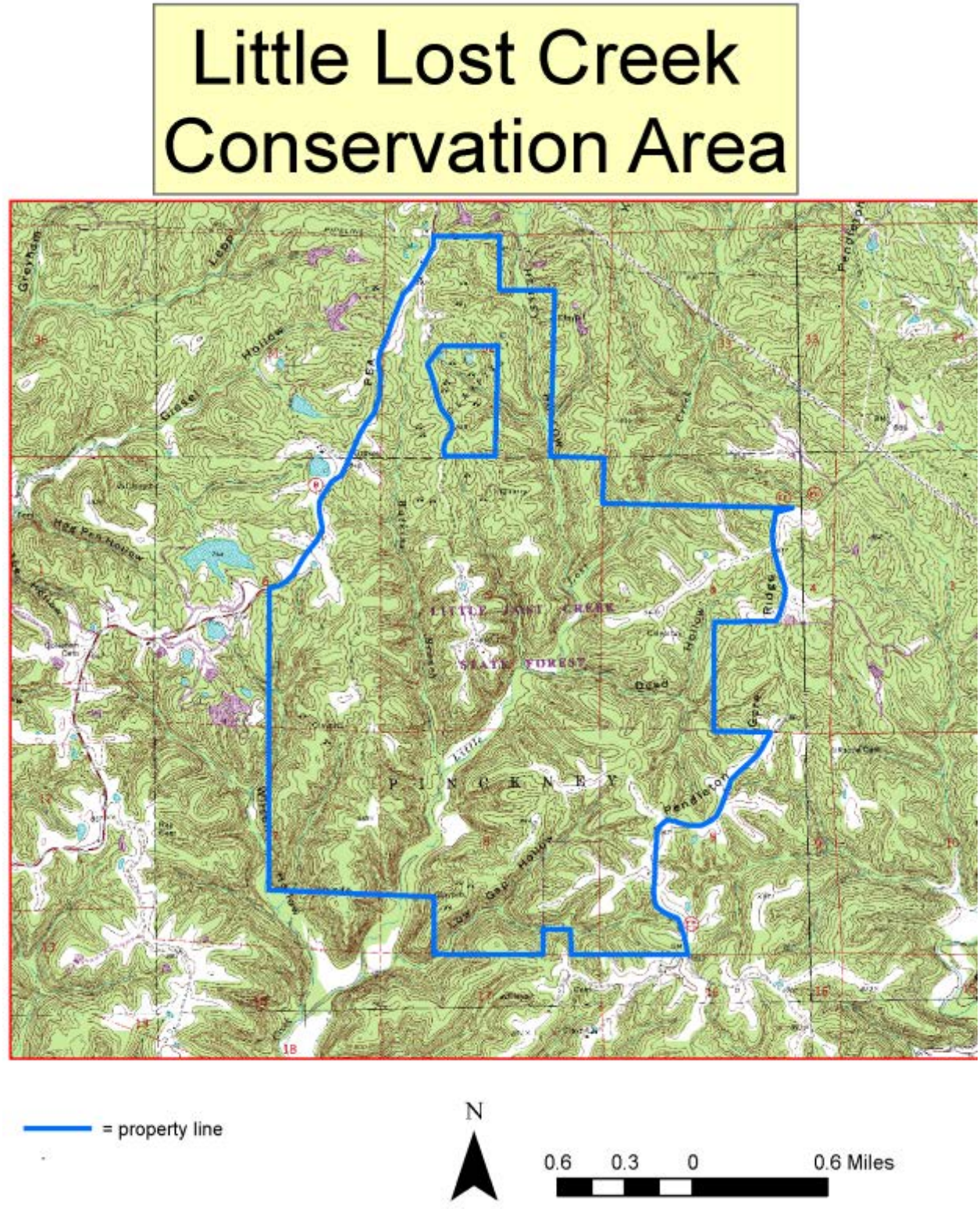


Figure 4: Current Vegetative Map

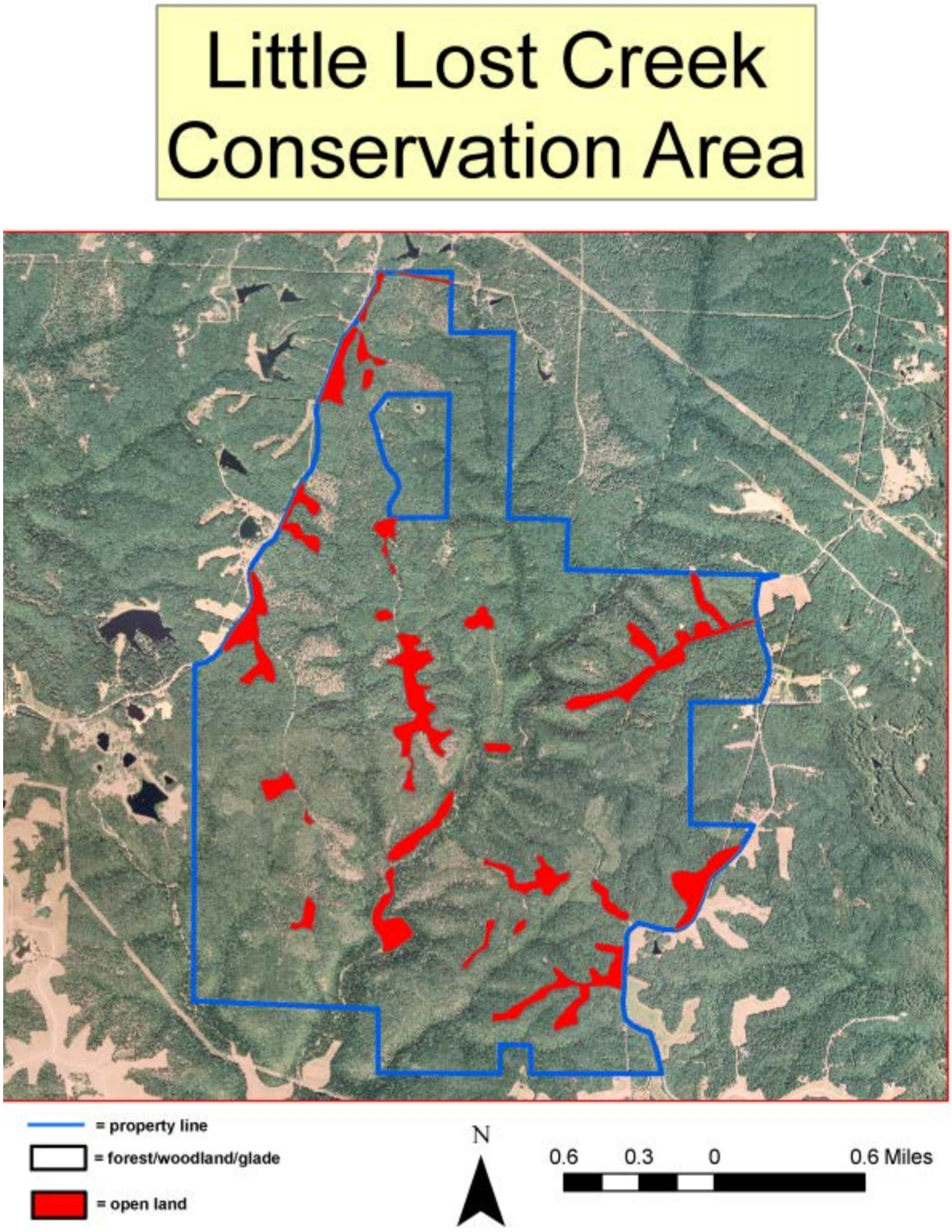


Figure 5: Proximity Map

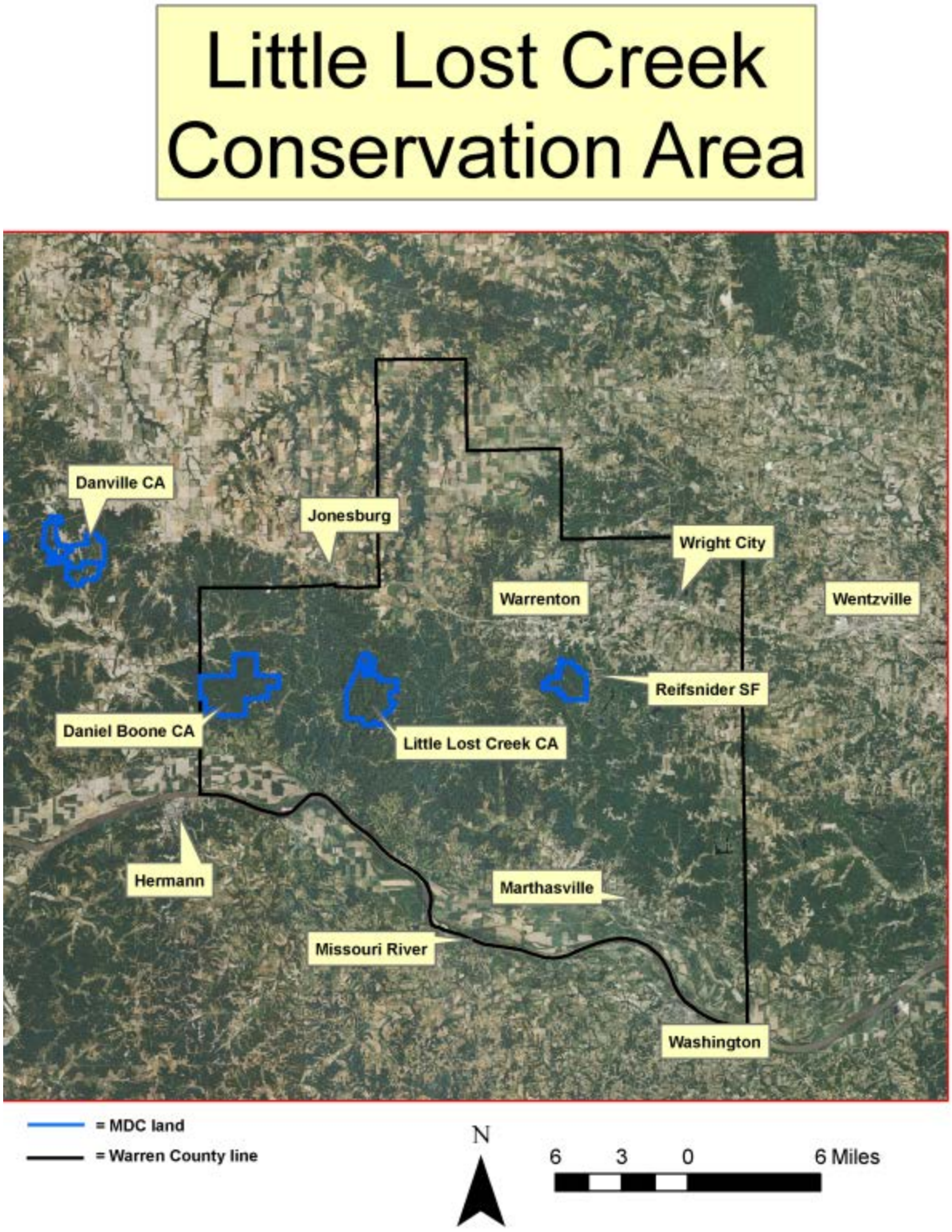


Figure 6: Easement Map

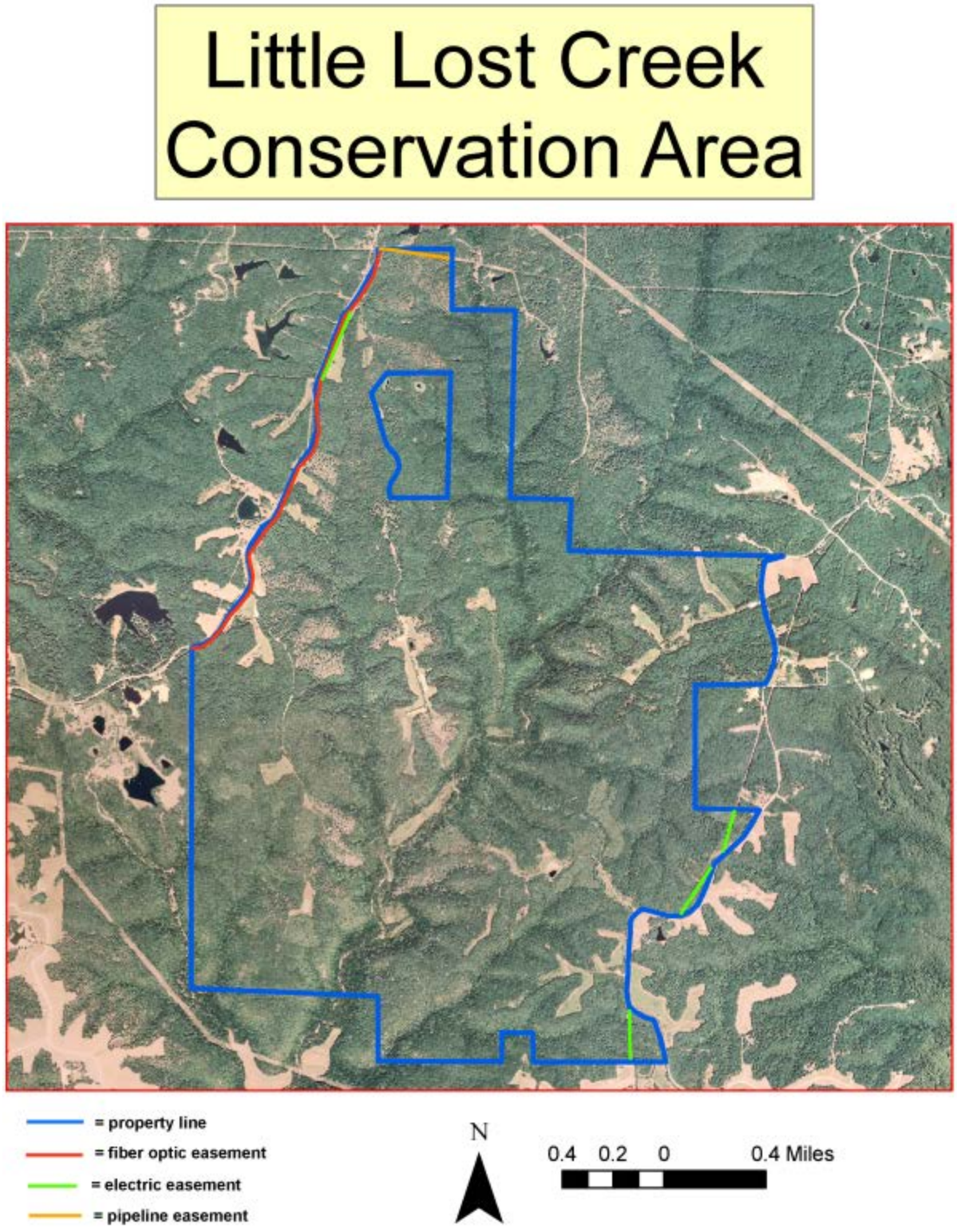
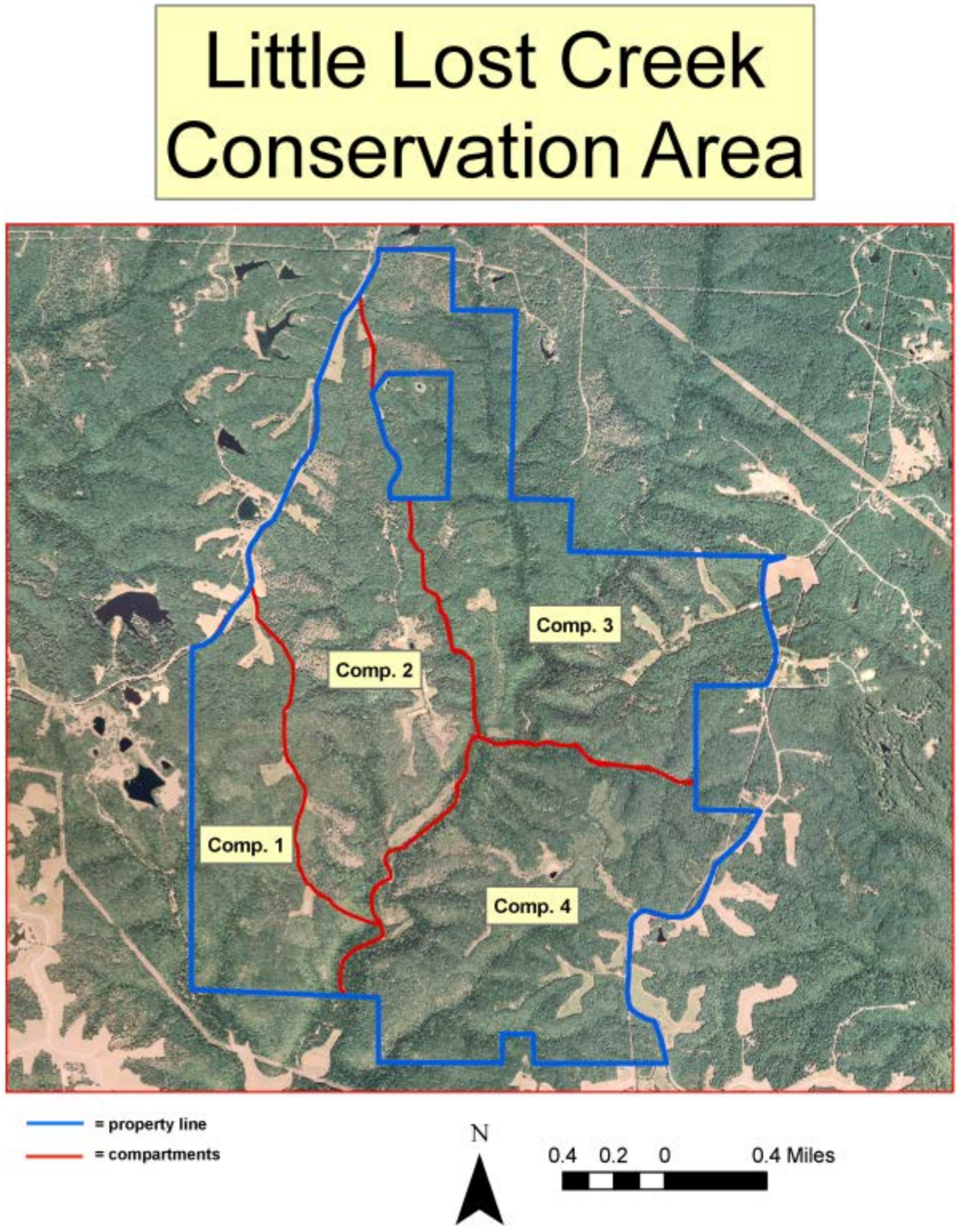


Figure 7: Compartment Map



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